

What is claimed is:

1 1. A method for controlling echoes within a
2 telecommunication switching system having a plurality of local
3 exchange carriers and a plurality of local telecommunication
4 switches where each of the plurality of local exchange carriers
5 is connected to a plurality of telephone sets attached to a
6 plurality of local telephone switching offices of each of the
7 plurality of local exchange carriers and each of the plurality of
8 local telecommunication switches is connected to a plurality of
9 telephone sets, comprising the steps of:
10 receiving by one of the plurality of local
11 telecommunication switches a call setup message from one of
12 a first plurality of telephone sets connected to one of a first
13 plurality of local exchange carriers with a first trunk circuit
14 interconnecting the one of the plurality of local
15 telecommunication switches with the one of the first plurality of
16 local exchange carriers;
17 determining by the one of the plurality of local
18 telecommunication switches that the call setup message
19 designates one of a second plurality of telephone sets
20 connected to one of a second plurality of local exchange
21 carriers as a destination of the call setup message;
22 determining by the one of the plurality of local
23 telecommunication switches in response to the call setup
24 message that a first one of a first plurality of local telephone

25 switching offices of the one of the first plurality of local
26 exchange carriers to which the one of the first plurality of
27 telephone sets is connected requires echo cancellation
28 operations; and

29 providing by the one of the plurality of local
30 telecommunication switches in response to the determination
31 that echo cancellation operations are required for the first one
32 of the first plurality of local telephone switching offices echo
33 cancellation operations for a first call path from the one of the
34 plurality of local telecommunication switches to the first one of
35 the first plurality of the local telephone switching offices of the
36 first one of the plurality of local exchange carriers.

1 2. The method of claim 1 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 3. The method of claim 1 wherein the step of
2 providing comprises the steps of verifying that the first trunk
3 circuit has echo cancellation capabilities;
4 activating the first trunk circuit to provide echo
5 cancellation operations on the first call path.

1 4. The method of claim 3 wherein the step of
2 providing comprises the step of adjusting the echo cancellation

3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 5. The method of claim 1 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit, a second trunk
4 circuit, and a third trunk circuit are connected where the third
5 trunk circuit is part of a second call path from the one of the
6 plurality of local telecommunication switches to the first one of
7 the second plurality of local telephone switching offices of the
8 one of the second plurality of local exchange carriers and the
9 step of providing comprises the steps of verifying that the
10 second trunk circuit has echo cancellation capabilities;
11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network,
13 second trunk circuit, switching network and third trunk circuit;
14 and
15 enabling the second trunk circuit to provide echo
16 cancellation operations on audio information coming from the
17 third trunk circuit.

1 6. The method of claim 5 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the second trunk circuit with respect to an echo
4 tail length for the second call path.

1 7. The method of claim 1 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit and a second
4 trunk circuit are connected where the second trunk circuit is
5 part of a second call path from the one of the plurality of local
6 telecommunication switches to the first one of the second
7 plurality of local telephone switching offices of the one of the
8 second plurality of local exchange carriers and the step of
9 providing comprises the steps of verifying that the second trunk
10 circuit has echo cancellation capabilities;

11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network and
13 second trunk circuit; and

14 enabling the second trunk circuit to provide echo
15 cancellation operations on audio information coming from the
16 first trunk circuit.

1 8. The method of claim 7 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 9. The method of claim 1 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit, a second trunk
4 circuit, and a third trunk circuit are connected where the third

5 trunk circuit is part of a second call path from the one of the
6 plurality of local telecommunication switches to the first one of
7 the second plurality of local telephone switching offices of the
8 one of the second plurality of local exchange carriers and the
9 step of providing comprises the steps of verifying that the
10 second trunk circuit has echo cancellation capabilities;

11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network,
13 second trunk circuit, switching network and third trunk circuit;

14 enabling the second trunk circuit to provide echo
15 cancellation operations on audio information coming from the
16 first trunk circuit;

17 determining by the one of the plurality of local
18 telecommunication switches in response to the call setup
19 message that a first one of the plurality of local telephone
20 switching offices of the one of the second plurality of local
21 exchange carriers to which the one of the second plurality of
22 telephone sets is connected requires echo cancellation
23 operations; and

24 enabling the third trunk circuit to provide echo
25 cancellation operations on audio information coming from the
26 second call path.

1 10. The method of claim 9 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the third trunk circuit with respect to an echo tail

4 length for the second call path.

1 11. The method of claim 1 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit and a second
4 trunk circuit are connected where the second trunk circuit is
5 part of a second call path from the one of the plurality of local
6 telecommunication switches to the first one of the second
7 plurality of local telephone switching offices of the one of the
8 second plurality of local exchange carriers and the step of
9 providing comprises the steps of verifying that the second trunk
10 circuit has echo cancellation capabilities;

11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network, and
13 second trunk circuit;

14 enabling the first trunk circuit to provide echo
15 cancellation operations on audio information coming from the
16 first call path;

17 determining by the one of the plurality of local
18 telecommunication switches in response to the call setup
19 message that the first one of the second plurality of local
20 telephone switching offices of the one of the second plurality of
21 local exchange carriers to which the one of the second plurality
22 of telephone sets is connected requires echo cancellation
23 operations; and

24 enabling the second trunk circuit to provide echo

25 cancellation operations on audio information coming from the
26 second call path.

1 12. The method of claim 11 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the second trunk circuit with respect to an echo
4 tail length for the second call path.

1 13. A method for controlling echoes within a
2 telecommunication switching system having a plurality of local
3 exchange carriers, and a plurality of local telecommunication
4 switches where each of the plurality of local exchange carriers
5 is connected to a plurality of telephone sets attached to a
6 plurality of local telephone switching offices of each of the
7 plurality of local exchange carriers and each of the plurality of
8 local telecommunication switches is connected to a plurality of
9 telephone sets and a first and second ones of the plurality of
10 local telecommunication switches interconnected by a third
11 plurality of local exchange carriers, comprising the steps of:

12 receiving by one of the plurality of local
13 telecommunication switches a call setup message from one of
14 a first plurality of telephone sets connected to one of a first
15 plurality of local exchange carriers via the third plurality of local
16 exchange carriers and the second one of the plurality of local
17 telecommunication switches and a first trunk circuit
18 interconnecting the first one of the plurality of local

19 telecommunication switches with the third one of the plurality of
20 local exchange carriers;

21 determining by the first one of the plurality of local
22 telecommunication switches that the call setup message
23 designates one of a second plurality of telephone sets
24 connected to one of a second plurality of local telephone
25 switching offices of one of a second plurality of local exchange
26 carriers as a destination of the call setup message;

27 determining by the first one of the plurality of local
28 telecommunication switches in response to the call setup
29 message that a first one of a first plurality of local telephone
30 switching offices of the one of the first plurality of local
31 exchange carriers to which the one of the first plurality of
32 telephone sets is connected requires echo cancellation
33 operations; and

34 providing by the first one of the plurality of local
35 telecommunication switches in response to the determination
36 that echo cancellation operations are required for the first one
37 of the first plurality of local telephone switching offices echo
38 cancellation operations for a first call path from the first one of
39 the plurality of local telecommunication switches to the first one
40 of the first plurality of the local telephone switching offices of the
41 first one of the plurality of local exchange carriers.

1 14. The method of claim 13 wherein the step of
2 providing comprises the steps of verifying that the first trunk

3 circuit has echo cancellation capabilities;
4 activating the first trunk circuit to provide echo
5 cancellation operations on the first call path.

1 15. The method of claim 14 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 16. The method of claim 13 wherein the first one of
2 the plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit, a second trunk
4 circuit, and a third trunk circuit are connected where the third
5 trunk circuit is part of a second call path from the first one of the
6 plurality of local telecommunication switches to the first one of
7 the second plurality of local telephone switching offices of the
8 one of the second plurality of local exchange carriers and the
9 step of providing comprises the steps of verifying that the
10 second trunk circuit has echo cancellation capabilities;

11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network,
13 second trunk circuit, switching network and third trunk circuit;
14 and

15 enabling the second trunk circuit to provide echo
16 cancellation operations on audio information coming from the
17 first trunk circuit.

1 17. The method of claim 13 wherein the first one of
2 the plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit and a second
4 trunk circuit are connected where the second trunk circuit is
5 part of a second call path from the first one of the plurality of
6 local telecommunication switches to the first one of the second
7 plurality of local telephone switching offices of the one of the
8 second plurality of local exchange carriers and the step of
9 providing comprises the steps of verifying that the second trunk
10 circuit has echo cancellation capabilities;

11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network and
13 second trunk circuit; and

14 enabling the second trunk circuit to provide echo
15 cancellation operations on audio information coming from the
16 first trunk circuit.

1 18. The method of claim 13 wherein the first one of
2 the plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit, a second trunk
4 circuit, and a third trunk circuit are connected where the third
5 trunk circuit is part of a second call path from the first one of the
6 plurality of local telecommunication switches to the first one of
7 the second plurality of local telephone switching offices of the
8 one of the second plurality of local exchange carriers and the
9 step of providing comprises the steps of verifying that the

10 second trunk circuit has echo cancellation capabilities;
11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network,
13 second trunk circuit, switching network and third trunk circuit;
14 enabling the second trunk circuit to provide echo
15 cancellation operations on audio information coming from the
16 first trunk circuit;
17 determining by the first one of the plurality of local
18 telecommunication switches in response to the call setup
19 message that a first one of the second plurality of local
20 telephone switching offices of the one of the second plurality of
21 local exchange carriers to which the one of the second plurality
22 of telephone sets is connected requires echo cancellation
23 operations; and
24 enabling the third trunk circuit to provide echo
25 cancellation operations on audio information coming from the
26 second call path.

1 19. The method of claim 13 wherein the first one of
2 the plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit and a second
4 trunk circuit are connected where the second trunk circuit is
5 part of a second call path from the first one of the plurality of
6 local telecommunication switches to the first one of the second
7 plurality of local telephone switching offices of the one of the
8 second plurality of local exchange carriers and the step of

9 providing comprises the steps of verifying that the second trunk
10 circuit has echo cancellation capabilities;

11 establishing an internal path from the first and second
12 call paths through the first trunk circuit, switching network, and
13 second trunk circuit;

14 enabling the first trunk circuit to provide echo
15 cancellation operations on audio information coming from the
16 first call path;

17 determining by the first one of the plurality of local
18 telecommunication switches in response to the call setup
19 message that the first one of the second plurality of local
20 telephone switching offices of the one of the second plurality of
21 local exchange carriers to which the one of the second plurality
22 of telephone sets is connected requires echo cancellation
23 operations; and

24 enabling the second trunk circuit to provide echo
25 cancellation operations on audio information coming from the
26 second call path.

1 20. A method for controlling echoes within a
2 telecommunication switching system having a plurality of local
3 exchange carriers, a wide area network, pluralities of
4 softphones, a plurality of remote switches, and a plurality of
5 local telecommunication switches where each of the plurality of
6 local exchange carriers is connected to a plurality of telephone
7 sets attached to a plurality of local telephone switching offices

8 of each of the plurality of local exchange carriers and each of
9 the plurality of local telecommunication switches is connected
10 to a plurality of telephone sets and each of the plurality of
11 remote switches is connected to a first plurality of softphones,
12 comprising the steps of:

13 connecting the plurality of remote switches to each of
14 the plurality of local telecommunication switches via the wide
15 area network;

16 providing echo cancellation circuits in each of the
17 plurality of remote switches with each echo cancellation circuit
18 having an echo tail length adjusted to eliminate an echo
19 produced by each of the first plurality of softphones;

20 connecting each of a second plurality of softphones to
21 each of the plurality of local telecommunication switches via the
22 wide area network;

23 providing an echo cancellation circuit in each of the
24 second plurality of softphones having an echo tail length
25 adjusted to eliminate an echo produced by each of the second
26 plurality of softphones;

27 connecting one of the plurality of local exchange
28 carriers to the wide area network via one of the plurality of local
29 telecommunication switches with the one of the plurality of local
30 exchange carriers interconnected to the one of the plurality of
31 local telecommunication switches by a plurality of trunk circuits
32 in the one of the plurality of local telecommunication switches;

33 and
34 providing echo cancellation operations in each of the
35 plurality of trunk circuits adjusted to eliminate echoes produced
36 by the one of the plurality of local exchange carriers on an
37 individual call path basis.

1 21. The method of claim 20 wherein the step of
2 providing echo cancellation operation in each of the plurality of
3 trunk circuits comprises the steps of determining by the one of
4 the plurality of local telecommunication switches that a call
5 setup message received from the one of the plurality of local
6 exchange carriers via one of the plurality of trunk circuits
7 designates one of the first plurality of softphones connected to
8 the one of the plurality of the local exchange carriers;
9 determining by the one of the plurality of local
10 telecommunication switches in response to the call setup
11 message that a first one of a plurality of local telephone
12 switching offices of the one of the first plurality of local
13 exchange carriers to which the one of the plurality of telephone
14 sets is connected requires echo cancellation operations; and
15 enabling the one of the plurality of trunk circuits to
16 provide an echo cancellation operation for a telephone call
17 associated with the call setup message.

1 22. The method of claim 21 wherein the step of
2 providing comprises the step of adjusting the echo cancellation

3 capabilities of the one of the plurality of trunk circuits with
4 respect to an echo tail length for the first call path.

1 23. The method of claim 22 wherein the one of the
2 plurality of local telecommunication switches is connected to
3 the wide area network by a Internet Protocol trunk circuit and
4 the step of providing the echo cancellation operation further
5 comprises providing an additional echo cancellation operation
6 in the Internet Protocol trunk circuit.

1 24. The method of claim 20 wherein the one of the
2 plurality of local telecommunication switches is connected to
3 the wide area network by a Internet Protocol trunk circuit and
4 the step of providing echo cancellation operation in the Internet
5 Protocol trunk circuit comprises the steps of determining by the
6 one of the plurality of local telecommunication switches that a
7 call setup message received from the one of the plurality of
8 local exchange carriers via one of the plurality of trunk circuits
9 designates one of the first plurality of softphones connected to
10 the one of the plurality of the local exchange carriers;
11 determining by the one of the plurality of local
12 telecommunication switches in response to the call setup
13 message that a first one of a plurality of local telephone
14 switching offices of the one of the first plurality of local
15 exchange carriers to which the one of the plurality of telephone
16 sets is connected requires echo cancellation operations; and

17 enabling the Internet Protocol trunk circuit to provide
18 an echo cancellation operation for a telephone call associated
19 with the call setup message.

1 25. The method of claim 24 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the Internet Protocol trunk circuit with respect to
4 an echo tail length for the first call path.

1 26. The method of claim 25 wherein the step of
2 providing the echo cancellation operation further comprises
3 providing an additional echo cancellation operation in the one of
4 the plurality of trunk circuits.

1 27. The method of claim 26 wherein the step of
2 further providing comprises the step of adjusting the echo
3 cancellation capabilities of the one of the plurality of trunk
4 circuits.

1 28. The method of claim 20 wherein the one of the
2 plurality of local telecommunication switches is connected to
3 the wide area network by a Internet Protocol trunk circuit and
4 the step of providing echo cancellation operation in the Internet
5 Protocol trunk circuit comprises the steps of further determining
6 by the one of the plurality of local telecommunication switches
7 that another call setup message received from the one of the
8 plurality of local exchange carriers via one of the plurality of

9 trunk circuits designates one of the second plurality of
10 softphones connected to the one of the plurality of the local
11 exchange carriers;
12 determining by the one of the plurality of local
13 telecommunication switches in response to the call setup
14 message that a first one of a plurality of local telephone
15 switching offices of the one of the first plurality of local
16 exchange carriers to which the one of the plurality of telephone
17 sets is connected requires echo cancellation operations; and
18 enabling the Internet Protocol trunk circuit to provide
19 an echo cancellation operation for a telephone call associated
20 with the other call setup message.

1 29. The method of claim 28 wherein the step of
2 providing comprises the step of adjusting the echo cancellation
3 capabilities of the Internet Protocol trunk circuit with respect to
4 an echo tail length for the first call path.

1 30. The method of claim 29 wherein the step of
2 providing the echo cancellation operation further comprises
3 providing an additional echo cancellation operation in the one of
4 the plurality of trunk circuits.

1 31. The method of claim 30 wherein the step of
2 further providing comprises the step of adjusting the echo
3 cancellation capabilities of the one of the plurality of trunk

4 circuits.

1 32. An apparatus for controlling echoes within a
2 telecommunication switching system having a plurality of local
3 exchange carriers and a plurality of local telecommunication
4 switches where each of the plurality of local exchange carriers
5 is connected to a plurality of telephone sets attached to a
6 plurality of local telephone switching offices of each of the
7 plurality of local exchange carriers and each of the plurality of
8 local telecommunication switches is connected to a plurality of
9 telephone sets, comprising:

10 means for receiving by one of the plurality of local
11 telecommunication switches a call setup message from one of
12 a first plurality of telephone sets connected to one of a first
13 plurality of local exchange carriers with a first trunk circuit
14 interconnecting the one of the plurality of local
15 telecommunication switches with the one of the first plurality of
16 local exchange carriers;

17 means for determining by the one of the plurality of
18 local telecommunication switches that the call setup message
19 designates one of a second plurality of telephone sets
20 connected to one of a second plurality of local exchange
21 carriers as a destination of the call setup message;

22 means for determining by the one of the plurality of
23 local telecommunication switches in response to the call setup
24 message that a first one of a first plurality of local telephone

25 switching offices of the one of the first plurality of local
26 exchange carriers to which the one of the first plurality of
27 telephone sets is connected requires echo cancellation
28 operations; and

29 means for providing by the one of the plurality of local
30 telecommunication switches in response to the determination
31 that echo cancellation operations are required for the first one
32 of the first plurality of local telephone switching offices echo
33 cancellation operations for a first call path from the one of the
34 plurality of local telecommunication switches to the first one of
35 the first plurality of the local telephone switching offices of the
36 first one of the plurality of local exchange carriers.

1 33. The apparatus of claim 32 wherein the means for
2 providing comprises means for adjusting the echo cancellation
3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 34. The apparatus of claim 32 wherein the means for
2 providing comprises means for verifying that the first trunk
3 circuit has echo cancellation capabilities;

4 means for activating the first trunk circuit to provide
5 echo cancellation operations on the first call path.

1 35. The apparatus of claim 34 wherein the means for
2 providing comprises means for adjusting the echo cancellation

3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 36. The apparatus of claim 32 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit, a second trunk
4 circuit, and a third trunk circuit are connected where the third
5 trunk circuit is part of a second call path from the one of the
6 plurality of local telecommunication switches to the first one of
7 the second plurality of local telephone switching offices of the
8 one of the second plurality of local exchange carriers and the
9 means for providing comprises means for verifying that the
10 second trunk circuit has echo cancellation capabilities;

11 means for establishing an internal path from the first
12 and second call paths through the first trunk circuit, switching
13 network, second trunk circuit, switching network and third trunk
14 circuit; and

15 means for enabling the second trunk circuit to provide
16 echo cancellation operations on audio information coming from
17 the third trunk circuit.

1 37. The apparatus of claim 36 wherein the means for
2 providing comprises means for adjusting the echo cancellation
3 capabilities of the second trunk circuit with respect to an echo
4 tail length for the second call path.

1 38. The apparatus of claim 32 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit and a second
4 trunk circuit are connected where the second trunk circuit is
5 part of a second call path from the one of the plurality of local
6 telecommunication switches to the first one of the second
7 plurality of local telephone switching offices of the one of the
8 second plurality of local exchange carriers and the means for
9 providing comprises means for verifying that the second trunk
10 circuit has echo cancellation capabilities;

11 means for establishing an internal path from the first
12 and second call paths through the first trunk circuit, switching
13 network and second trunk circuit; and

14 means for enabling the second trunk circuit to provide
15 echo cancellation operations on audio information coming from
16 the first trunk circuit.

1 39. The apparatus of claim 38 wherein the means for
2 providing comprises means for adjusting the echo cancellation
3 capabilities of the first trunk circuit with respect to an echo tail
4 length for the first call path.

1 40. The apparatus of claim 32 wherein the one of the
2 plurality of local telecommunication switches comprises a
3 switching network to which the first trunk circuit, a second trunk
4 circuit, and a third trunk circuit are connected where the third

5 trunk circuit is part of a second call path from the one of the
6 plurality of local telecommunication switches to the first one of
7 the second plurality of local telephone switching offices of the
8 one of the second plurality of local exchange carriers and the
9 means for providing comprises means for verifying that the
10 second trunk circuit has echo cancellation capabilities;

11 means for establishing an internal path from the first
12 and second call paths through the first trunk circuit, switching
13 network, second trunk circuit, switching network and third trunk
14 circuit;

15 means for enabling the second trunk circuit to provide
16 echo cancellation operations on audio information coming from
17 the first trunk circuit;

18 means for determining by the one of the plurality of
19 local telecommunication switches in response to the call setup
20 message that a first one of the plurality of local telephone
21 switching offices of the one of the second plurality of local
22 exchange carriers to which the one of the second plurality of
23 telephone sets is connected requires echo cancellation
24 operations; and

25 means for enabling the third trunk circuit to provide
26 echo cancellation operations on audio information coming from
27 the second call path.

1 41. The apparatus of claim 40 wherein the means for
2 providing comprises means for adjusting the echo cancellation

3 capabilities of the third trunk circuit with respect to an echo tail
4 length for the second call path.

1 42. An apparatus for controlling echoes within a
2 telecommunication switching system having a plurality of local
3 exchange carriers, a wide area network, pluralities of
4 softphones, a plurality of remote switches, and a plurality of
5 local telecommunication switches where each of the plurality of
6 local exchange carriers is connected to a plurality of telephone
7 sets attached to a plurality of local telephone switching offices
8 of each of the plurality of local exchange carriers and each of
9 the plurality of local telecommunication switches is connected
10 to a plurality of telephone sets and each of the plurality of
11 remote switches is connected to a first plurality of softphones,
12 comprising:

13 means for connecting the plurality of remote switches
14 to each of the plurality of local telecommunication switches via
15 the wide area network;

16 means for providing echo cancellation circuits in each
17 of the plurality of remote switches with each echo cancellation
18 circuit having an echo tail length adjusted to eliminate an echo
19 produced by each of the first plurality of softphones;

20 means for connecting each of a second plurality of
21 softphones to each of the plurality of local telecommunication
22 switches via the wide area network;

23 means for providing an echo cancellation circuit in

24 each of the second plurality of softphones having an echo tail
25 length adjusted to eliminate an echo produced by each of the
26 second plurality of softphones;

27 means for connecting one of the plurality of local
28 exchange carriers to the wide area network via one of the
29 plurality of local telecommunication switches with the one of the
30 plurality of local exchange carriers interconnected to the one of
31 the plurality of local telecommunication switches by a plurality
32 of trunk circuits in the one of the plurality of local
33 telecommunication switches; and

34 means for providing echo cancellation operations in
35 each of the plurality of trunk circuits adjusted to eliminate
36 echoes produced by the one of the plurality of local exchange
37 carriers on an individual call path basis.

1 43. The apparatus of claim 42 wherein the means for
2 providing echo cancellation operation in each of the plurality of
3 trunk circuits comprises means for determining by the one of
4 the plurality of local telecommunication switches that a call
5 setup message received from the one of the plurality of local
6 exchange carriers via one of the plurality of trunk circuits
7 designates one of the first plurality of softphones connected to
8 the one of the plurality of the local exchange carriers;

9 means for determining by the one of the plurality of
10 local telecommunication switches in response to the call setup
11 message that a first one of a plurality of local telephone

12 switching offices of the one of the first plurality of local
13 exchange carriers to which the one of the plurality of telephone
14 sets is connected requires echo cancellation operations; and
15 means for enabling the one of the plurality of trunk
16 circuits to provide an echo cancellation operation for a
17 telephone call associated with the call setup message.

1 44. The apparatus of claim 43 wherein the means for
2 providing comprises means for adjusting the echo cancellation
3 capabilities of the one of the plurality of trunk circuits with
4 respect to an echo tail length for the first call path.

1 45. The apparatus of claim 44 wherein the one of the
2 plurality of local telecommunication switches is connected to
3 the wide area network by a Internet Protocol trunk circuit and
4 the means for providing the echo cancellation operation further
5 comprises providing an additional echo cancellation operation
6 in the Internet Protocol trunk circuit.

1 46. The apparatus of claim 42 wherein the one of the
2 plurality of local telecommunication switches is connected to
3 the wide area network by a Internet Protocol trunk circuit and
4 the means for providing echo cancellation operation in the
5 Internet Protocol trunk circuit comprises means for determining
6 by the one of the plurality of local telecommunication switches
7 that a call setup message received from the one of the plurality

8 of local exchange carriers via one of the plurality of trunk
9 circuits designates one of the first plurality of softphones
10 connected to the one of the plurality of the local exchange
11 carriers;

12 means for determining by the one of the plurality of
13 local telecommunication switches in response to the call setup
14 message that a first one of a plurality of local telephone
15 switching offices of the one of the first plurality of local
16 exchange carriers to which the one of the plurality of telephone
17 sets is connected requires echo cancellation operations; and

18 means for enabling the Internet Protocol trunk circuit
19 to provide an echo cancellation operation for a telephone call
20 associated with the call setup message.

1 47. The apparatus of claim 46 wherein the means for
2 providing comprises means for adjusting the echo cancellation
3 capabilities of the Internet Protocol trunk circuit with respect to
4 an echo tail length for the first call path.

1 48. The apparatus of claim 47 wherein the means for
2 providing the echo cancellation operation further comprises
3 providing an additional echo cancellation operation in the one of
4 the plurality of trunk circuits.

1 49. The apparatus of claim 48 wherein the means for
2 providing comprises further adjusting the echo cancellation

3 capabilities of the one of the plurality of trunk circuits.

1 50. The apparatus of claim 42 wherein the one of the
2 plurality of local telecommunication switches is connected to
3 the wide area network by a Internet Protocol trunk circuit and
4 the means for providing echo cancellation operation in the
5 Internet Protocol trunk circuit comprises means for further
6 determining by the one of the plurality of local
7 telecommunication switches that another call setup message
8 received from the one of the plurality of local exchange carriers
9 via one of the plurality of trunk circuits designates one of the
10 second plurality of softphones connected to the one of the
11 plurality of the local exchange carriers;

12 means for determining by the one of the plurality of
13 local telecommunication switches in response to the call setup
14 message that a first one of a plurality of local telephone
15 switching offices of the one of the first plurality of local
16 exchange carriers to which the one of the plurality of telephone
17 sets is connected requires echo cancellation operations; and

18 means for enabling the Internet Protocol trunk circuit
19 to provide an echo cancellation operation for a telephone call
20 associated with the other call setup message.

1 51. The apparatus of claim 50 wherein the means for
2 providing comprises means for adjusting the echo cancellation
3 capabilities of the Internet Protocol trunk circuit with respect to

4 an echo tail length for the first call path.

1 52. The apparatus of claim 51 wherein the means for
2 providing the echo cancellation operation further comprises
3 providing an additional echo cancellation operation in the one of
4 the plurality of trunk circuits.

1 53. The apparatus of claim 52 wherein the means for
2 providing comprises further adjusting the echo cancellation
3 capabilities of the one of the plurality of trunk circuits.